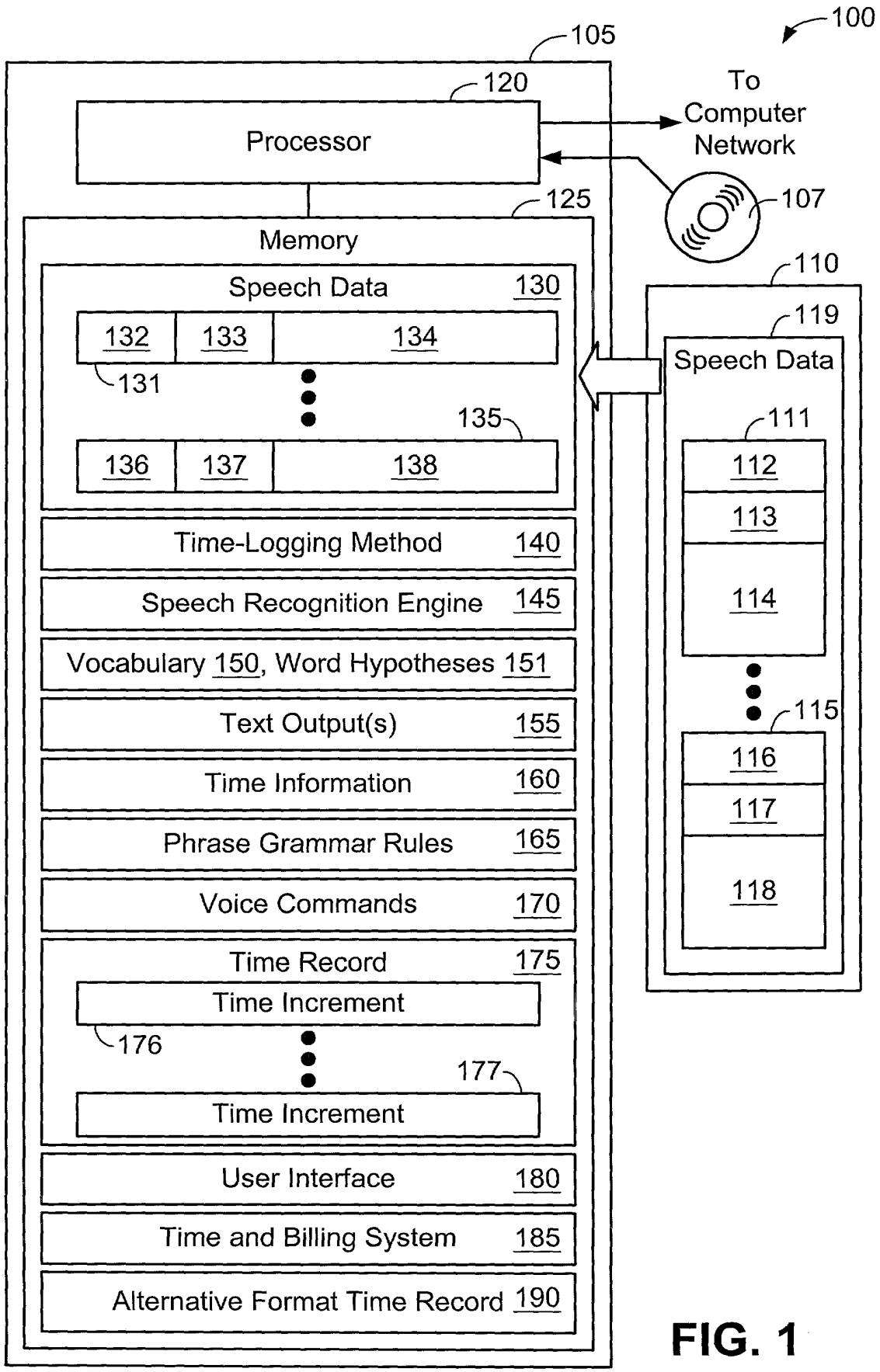
100
105
120
Processor
To
Computer
Network
107
125
Memory
Speech Data 130
132
133
134
131
135
136
137
138
Time-Logging Method 140
Speech Recognition Engine 145
Vocabulary 150, Word Hypotheses 151
Text Output(s) 155
Time Information 160
Phrase Grammar Rules 165
Voice Commands 170
Time Record 175
Time Increment
176
177
Time Increment
User Interface 180
Time and Billing System 185
Alternative Format Time Record 190
110
119
Speech Data
111
112
113
114
115
116
117
118

FIG. 1

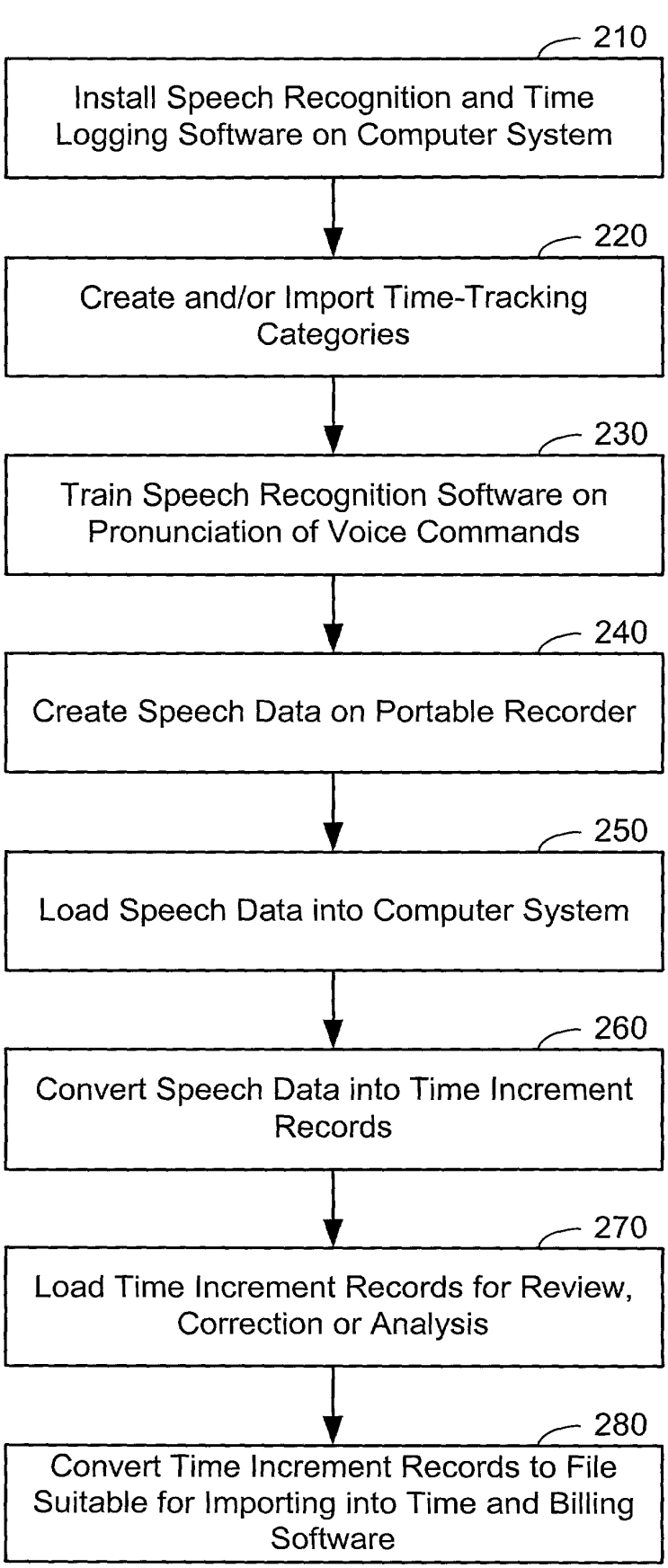
200
210
Install Speech Recognition and Time Logging Software on Computer System
220
Create and/or Import Time-Tracking Categories
230
Train Speech Recognition Software on Pronunciation of Voice Commands
240
Create Speech Data on Portable Recorder
250
Load Speech Data into Computer System
260
Convert Speech Data into Time Increment Records
270
Load Time Increment Records for Review, Correction or Analysis
280
Convert Time Increment Records to File Suitable for Importing into Time and Billing Software

FIG. 2

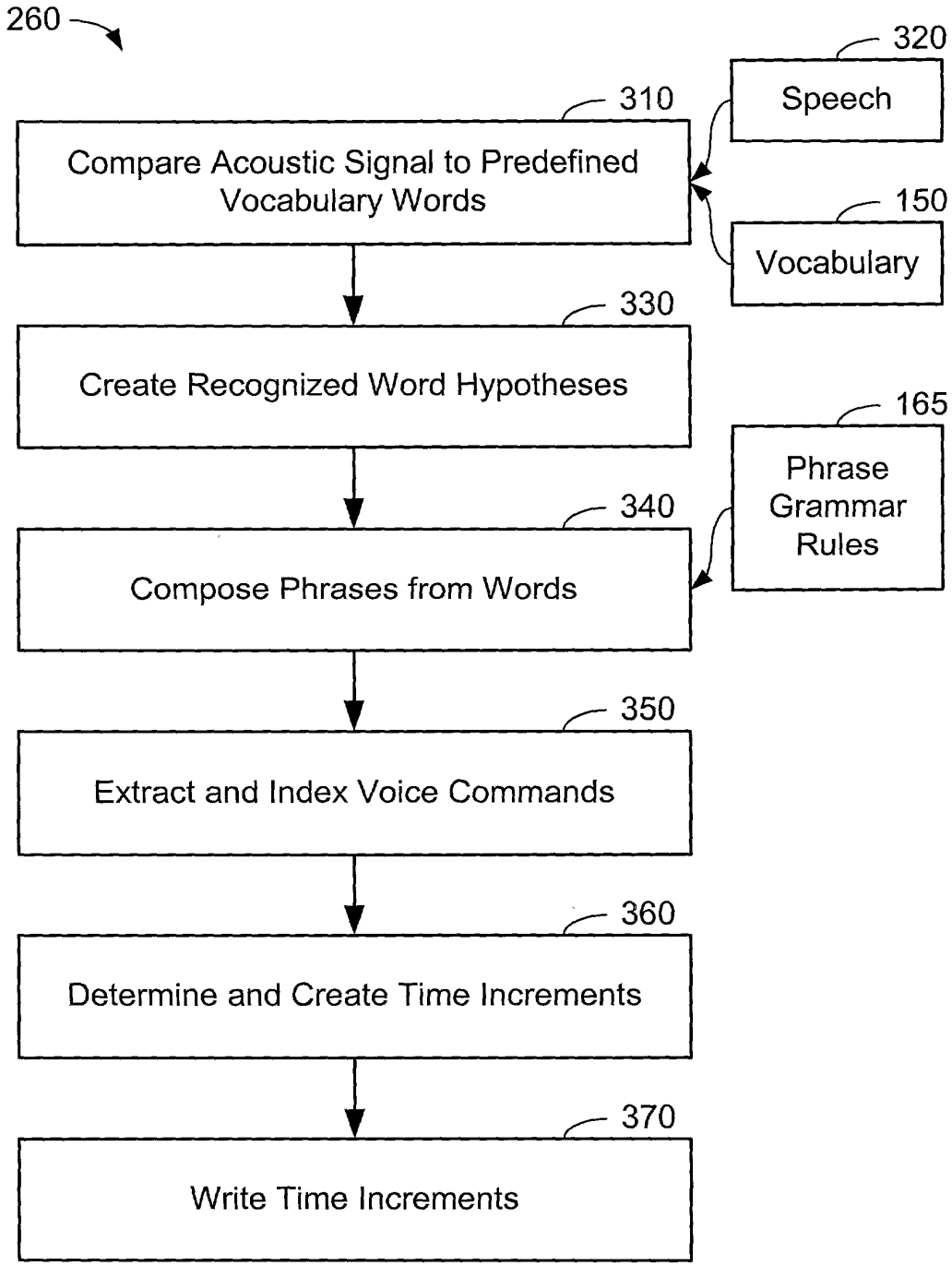
260
320
Speech
310
Compare Acoustic Signal to Predefined Vocabulary Words
150
Vocabulary
330
Create Recognized Word Hypotheses
165
Phrase Grammar Rules
340
Compose Phrases from Words
350
Extract and Index Voice Commands
360
Determine and Create Time Increments
370
Write Time Increments

FIG. 3

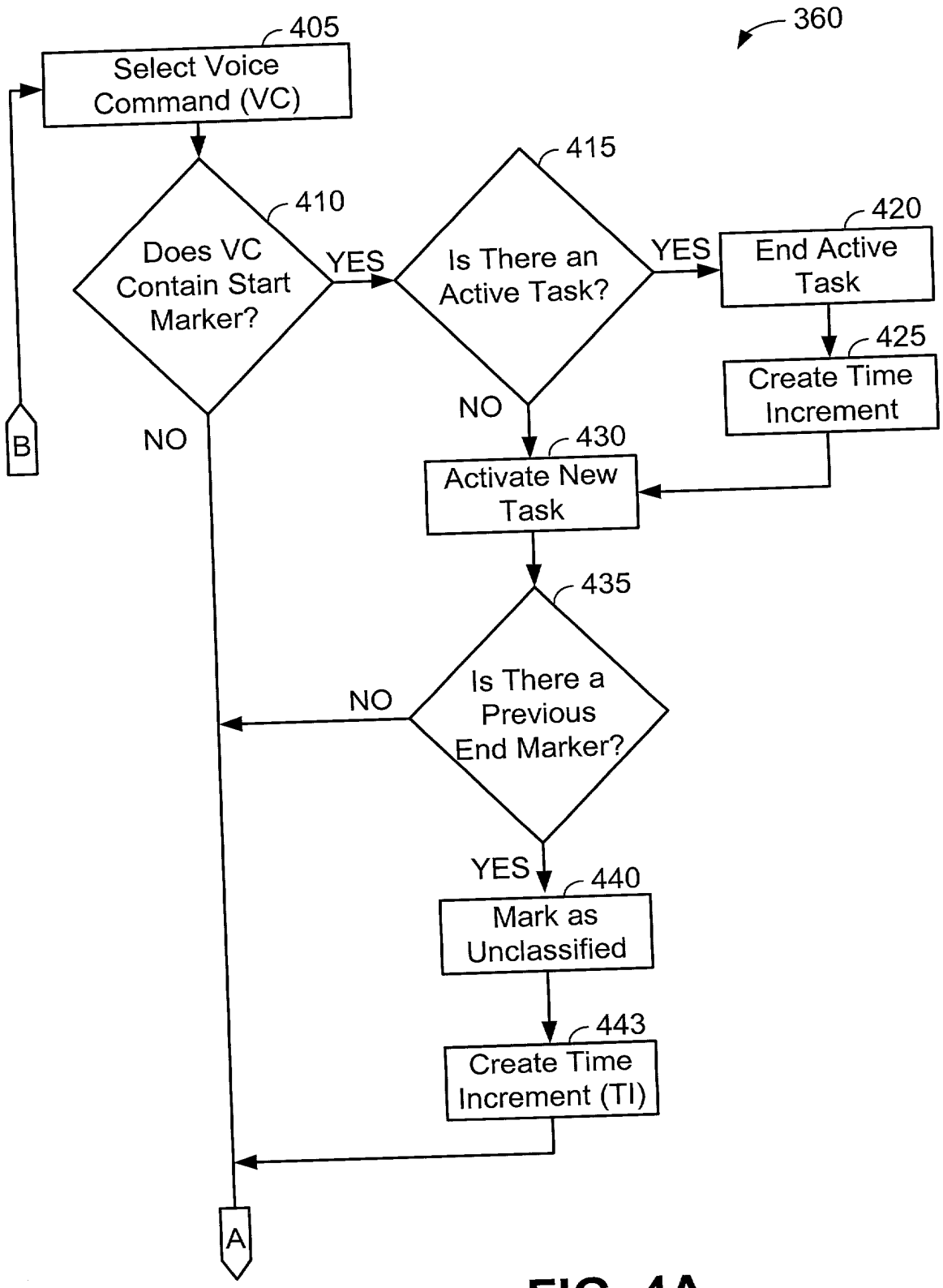
360
405
Select Voice Command (VC)
410
Does VC Contain Start Marker?
YES
415
Is There an Active Task?
YES
420
End Active Task
425
Create Time Increment
NO
430
Activate New Task
NO
435
Is There a Previous End Marker?
NO
YES
440
Mark as Unclassified
443
Create Time Increment (TI)
B
A

FIG. 4A

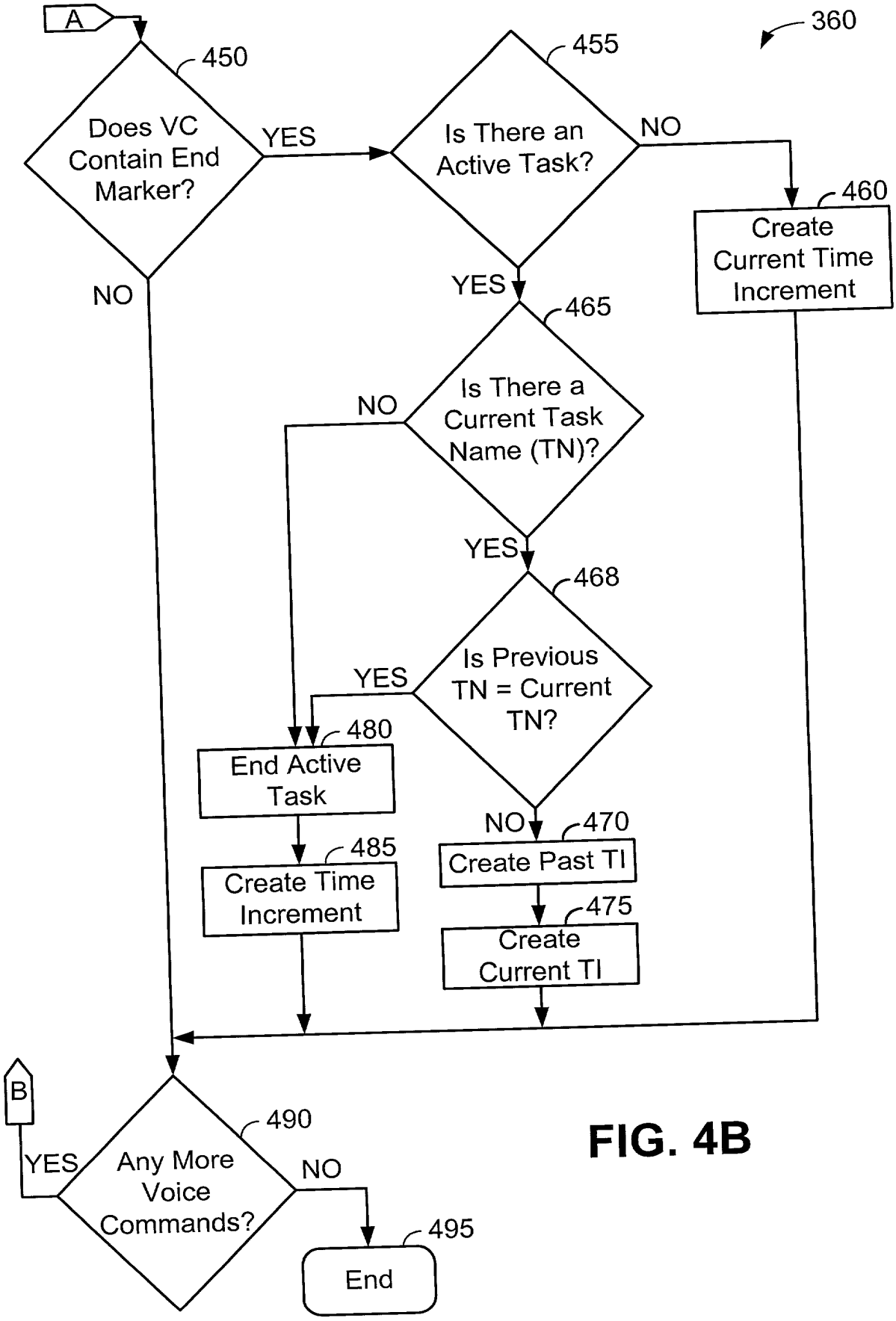
A
360
450
Does VC Contain End Marker?
YES
455
Is There an Active Task?
NO
460
Create Current Time Increment
NO
YES
465
Is There a Current Task Name (TN)?
NO
YES
468
Is Previous TN = Current TN?
YES
480
End Active Task
485
Create Time Increment
NO
470
Create Past TI
475
Create Current TI
B
490
Any More Voice Commands?
YES
NO
495
End

FIG. 4B

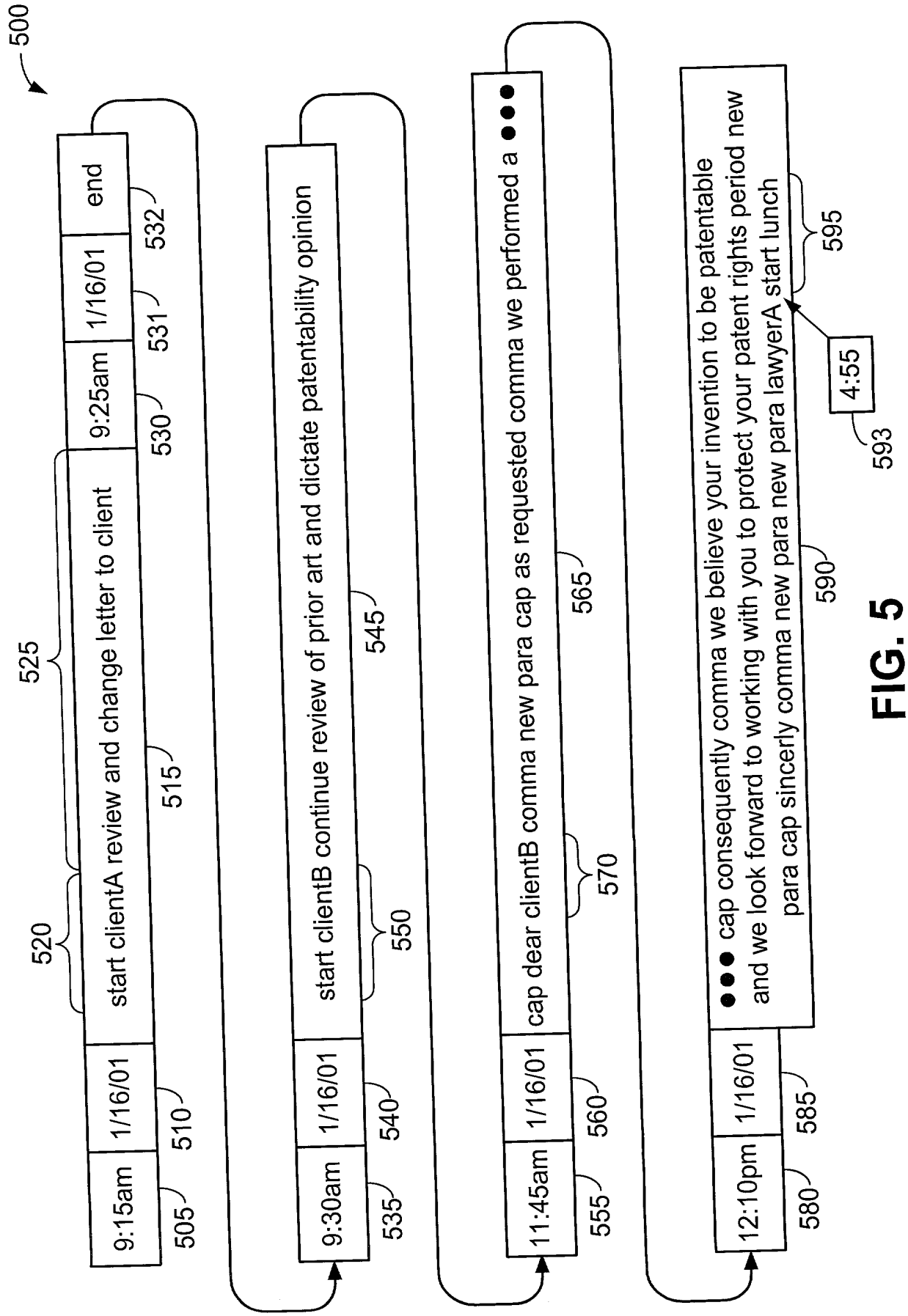
500
525
520
9:15am
1/16/01
start clientA review and change letter to client
9:25am
1/16/01
end
505
510
515
530
531
532
9:30am
1/16/01
start clientB continue review of prior art and dictate patentability opinion
535
540
545
550
11:45am
1/16/01
cap dear clientB comma new para cap as requested comma we performed a ●●●
555
560
565
570
12:10pm
1/16/01
●●● cap consequently comma we believe your invention to be patentable and we look forward to working with you to protect your patent rights period new para cap sincerly comma new para lawyerA start lunch
4:55
580
585
590
593
595

FIG. 5

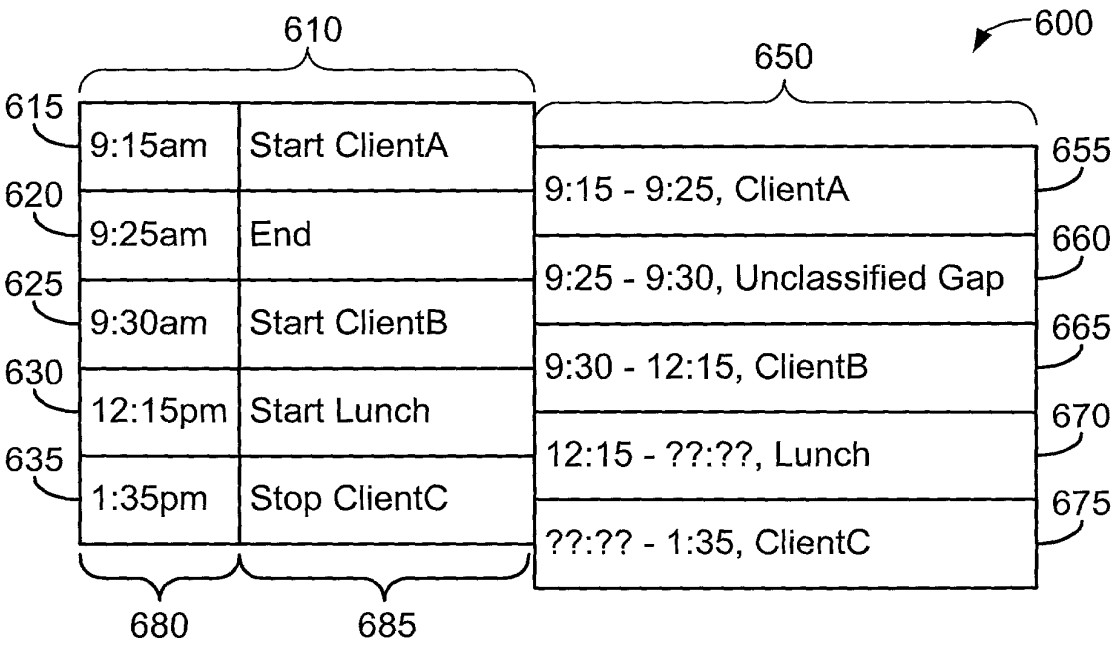

FIG. 6

165

```
<task> = projectA | lunch | kraft | meeting | clientA | clientB | clientC
<start-premarker> = begin | start
<start-postmarker> = starting now
<matter-number> = 910 | 920
<end-premarker> = end | quit | stop | quitting
<end-marker> = going home | stopping
<end-postmarker> = is done
<phrase> = <start-premarker> | <end-premarker> + <task>
<phrase> = <start-premarker> + <task> + <matter-number>
<phrase> = <task> + <start-postmarker> | <end-postmarker>
<phrase> = <end-premarker> | <end-marker>
```

FIG. 7

800

File Consultant Project Time Records Billing

Time Record		
Nickname	Start Time	End
kraft	11:15	11:55
gap	11:55	1:05
meetings	1:05	3:13

Billable Activities		
Nickname	Description	Billing Rate
kraft	Kraft Knowledge Portal...	50.0
aventis	Aventis Website Enabl...	150.0
outreach	Educational Outreach	35.0
incubator	Ebusiness Incubator	52.0

Non-Billable Activities	
Nickname	Description
lunch	Lunch/breaks
reading	Personal Development/Reading
meetings	Team and Department Meetings

FIG. 8